Gmail by Google

Nathan Schumaker <[redacted]>

Fecundity and Movement Details

1 message

Nathan Schumaker <[redacted]> **Mon, Sep 20, 2010 at 11:04 PM**
To: Brendan White <Brendan_White@fws.gov>, Brian Woodbridge <Brian_Woodbridge@fws.gov>, Jeffrey Dunk <Jeffrey.Dunk@humboldt.edu>, Ray Davis <rjdavis@fs.fed.us>, Janice_Reid@blm.gov
Cc: Nathan Schumaker <[redacted]>

Thanks for all of the feedback to my email earlier today. To summarize briefly, we touched on two topics:

- Janice's concern that I might have bungled some reproduction parameters
- Ray's concern that our overall observed dispersal patterns may be a bit off

Happily, what Janice noticed was a typo in a slide, and the model itself was set up as it should have been. But further discussion raised the question regarding the adequacy of simulating nesting as 70% in even years, and 30% in odd years. Thanks Janice for the additional details.

We can certainly add more sophistication to the way we do this. At this point in time, I actually favor switching to a single mean nesting rate for all years, as it simplifies the simulations without (I expect) altering their ability to discriminate between reserve strategies. Its clear from the Tyee nesting data Janice sent that the simple even-high / odd-low paradigm is a bit over-simplified anyway. It would, however, be easy to stratify this mean rate by modeling region, which would add back some additional realism.

That said, I am not lobbying for making a change like this now, as we are already mid-way through the production runs. If we were to start over for some other reason, then this change might be warranted.

The issue Ray raised stemmed from the map of observed dispersal fluxes that I showed. It would be interesting to work iteratively with this data to see if HexSim's dispersal parameters can be fine-tuned to produce a better fit to Ray's data. But Jeff has argued, and I agree, that our current dispersal model is relatively simple and conservative. There may not be a lot of value in fine-tuning the dispersal process now, given that our goal is to look for *relative* changes in population size and stability between reserve strategies.

I'll leave this decision up to the real owl biologists among us!

Janice and Ray -- I really appreciate all of your help with this. Sorry for not including you in the original message! We've worked for quite a while on this owl scenario, trying to find the right balance between realism and parsimony. We can certainly continue to improve the model over time. But for the recovery planning process, we hope to minimize the assumptions and complexity in the approach.

Please forward to anyone else who might want to weigh in. I'll shut up now...

Nathan

Nathan Schumaker <[redacted]>

3 quick issues

7 messages

Nathan Schumaker <[redacted]> **Mon, Sep 20, 2010 at 9:11 AM**
To: Brian Woodbridge <Brian_Woodbridge@fws.gov>, Jeffrey Dunk <Jeffrey.Dunk@humboldt.edu>, Brendan White <Brendan_White@fws.gov>, Dave LaPlante <dave@nrg-gis.com>, Craig Ducey <Craig_Ducey@or.blm.gov>
Bcc: Carlos Carroll <carlos@klamathconservation.org>, Nathan Schumaker <[redacted]>

Hi gang,

Three follow-up issues that emerged from our meeting.

1. I'd made some typos on my slide describing our reproduction event. It caused some concern that we might have set our reproduction rates too high. I looked at this carefully and determined that it was just an error in the slide. The data on fecundities coming out of the DSAs (etc.) is compiled as females / female. The divisor is measured as all territorial females, not just nesting females. But in the HexSim reproduction event, the fecundity is equal to females / nesting female. On average, 1/2 of the territorial females will nest (apparently in real life, and thus in our simulation). For that reason, our HexSim reproductive rates are twice the measured fecundities. I'd reversed the labels on the slide, but that was all. The simulations are fine.

2. Our baseline scenario has a 70% likelihood of nesting in even years, and a 30% likelihood of nesting in odd years. The attached scenario (Baseline-2) is identical, except it has a 50% likelihood of nesting every year. This scenario produces results similar to the original baseline (see attached PDF "Nesting Rate"), but without the even-odd zig-zagging.

3. One member of the audience approached me after the meeting ended. Sadly, I don't recall his name, but he was sitting next to Dominick. He mentioned that he had good dispersal data and was a little concerned that my dispersal map might exhibit too much movement between Marin and other areas, and perhaps in some other spots. He offered to share the data if we want to use it to better calibrate the movement event. But he said I should talk to Brendan about any data-exchange. I'm attaching a scan of the page he gave me (Dispersal Map). I'd probably recognize his name if anyone wants to take a guess at it. Is this process of fine-tuning dispersal something that you all would like to launch into. I think it could probably be done by varying the attraction / repulsion parameters... But I'm not yet convinced that there is really a problem to be solved.

Thanks,

Nathan

--

Nathan Schumaker
[redacted]
(541) 754-4658

3 attachments

Baseline-2.xml
31K

Nesting Rate.pdf
31K

Dispersal Map.pdf
271K

Jeffrey Dunk <Jeffrey.Dunk@humboldt.edu> **Mon, Sep 20, 2010 at 10:09 AM**
To: Nathan Schumaker <[redacted]>
Cc: Brian_Woodbridge@fws.gov

I think the person was Ray Davis – who gave you the dispersal data. I don't think we want to redo any analyses unless we're convinced that some of our settings are really wrong. We came out and said that we think that our estimates may be conservative. One thing that I think would help (in Portland) to deal with this issue (dispersal), is a histogram of actual dispersal distances within the simulations.

I thought your presentation was great Nathan. I thought all of our talks together were really effective. I spoke to a few folks who said the same.

Take care,

Jeff

From: Nathan Schumaker [mailto[redacted]]
Sent: Monday, September 20, 2010 9:12 AM
To: Brian Woodbridge; Jeffrey Dunk; Brendan White; Dave LaPlante; Craig Ducey
Subject: 3 quick issues

[Quoted text hidden]

Nathan Schumaker <[redacted]> **Mon, Sep 20, 2010 at 10:17 AM**
To: Jeffrey Dunk <Jeffrey.Dunk@humboldt.edu>
Cc: Brian_Woodbridge@fws.gov

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Yes -- it was Ray Davis.  Thanks!

I agree.  I think we've done a credible job of balancing realism with parsimony,
and that by using the model to rank the strategies, we are being safe, and
conservative.

The histogram of dispersal distances is easy enough to create.  But you'd be
happy with just one histogram for the entire population, right?

Nathan
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[Quoted text hidden]

--

Nathan Schumaker
[redacted]
(541) 754-4658

Jeffrey Dunk <Jeffrey.Dunk@humboldt.edu> **Mon, Sep 20, 2010 at 10:18 AM**
To: Nathan Schumaker <[redacted]>
Cc: Brian_Woodbridge@fws.gov

Yes, one histogram for the entire population.

Jeff

From: Nathan Schumaker [mailto[redacted]]
Sent: Monday, September 20, 2010 10:17 AM
To: Jeffrey Dunk
Cc: Brian_Woodbridge@fws.gov
Subject: Re: 3 quick issues

[Quoted text hidden]

Janice_Reid@blm.gov <Janice_Reid@blm.gov> **Mon, Sep 20, 2010 at 1:24 PM**
To: Raymond J Davis <rjdavis@fs.fed.us>
Cc: [redacted], Brian_Woodbridge@fws.gov

Yes, it helps and I just wanted to be sure Nathan was using what he thought he was using.

A few things to mull over:

1) If the proportion of nesting females is the parameter of importance, we already know that nesting birds are easier to detect and nesting status is only determined in the first 3 months of the field season. Reproductive status is determined the entire 6 month survey season. The average of 50% of the females that nest, is 50% of the females

that were checked for nesting status. On average, I would guess that we find 10% of the individuals after the deadline for determining nest status and most of those are non-reproductive.

2)Tyee was one of those study areas mentioned in Forsman et al that did not seem to not follow the even/odd reproduction pattern.

"The results from our analysis of fecundity were consistent with previous analyses in that there was substantial annual variation in fecundity on individual study areas and the biennial cycle of high fecundity in even-numbered years and low fecundity in odd-numbered years reported by Burnham et al. (1996) and Anthony et al. (2006) continued on some study areas. " Forsman et all in press

3)"Another consistent effect across study areas was variation in fecundity by age class. Fecundity was higher for adults than for 1-yr-olds, and 2-yr-olds were intermediate. A pattern of increasing fecundity with age is typical in birds (Clutton-Brock 1988, Saether 1990), and, in the case of territorial predators like Spotted Owls, probably reflects increased experience and familiarity with a territory and a long-term mate." Forsman et all in Press

If this is true that familiarity of the territory has a positive affect on the proportion nesting, then the instability that the barred owls are causing on site fidelity is placing more females in the category of unfamiliarity with their yearly acquired territory. This would decrease the reproductive potential.

Maybe all of this was already considered, but thought I'd throw it out there.

(Embedded image moved to file: pic16541.jpg)
Janice Reid
USDA Forest Service
PNW Research Station
c/o BLM
777 Garden Valley Blvd.
Roseburg, OR 97471
541-464-3229
janice_reid@or.blm.gov
All UTM's are NAD27, UTM zone 10

"I love a dog. He does nothing for political reasons." ~Will Rogers

Raymond J Davis <rjdavis@fs.fed.us>
09/20/2010 12:07 PM

To: Janice Reid <jareid@fs.fed.us>
cc:
Subject: Fw: 3 quick issues

See Nathans email below (#1)... does this reduce your concern?

Raymond J. Davis
Umpqua National Forest
2900 NW Stewart Pkwy
Roseburg, OR 97471
phone: (541) 957-3414
fax: (541) 957-3495
email: rjdavis@fs.fed.us

----- Forwarded by Raymond J Davis/R6/USDAFS on 09/20/2010 12:06 PM -----

Eric Greenquist/EUFO/OR/BLM/DOI@BLM
09/20/2010 09:34 AM

To: Raymond J Davis/R6/USDAFS@FSNOTES
cc:
Subject: Fw: 3 quick issues

Ray: Message from Nathan to a few. An apparent follow up to the briefing last week. Not sure who generated the dispersal map; a lot more dispersal habitat than I'm aware of.

Eric A. Greenquist
Wildlife Biologist
Bureau of Land Management, Eugene District Office
Phone: 541 683-6114
Fax: 541 683-6981
E-mail: eric_greenquist@blm.gov

http://www.education-for-conservation.org

----- Forwarded by Eric Greenquist/EUFO/OR/BLM/DOI on 09/20/2010 10:25 AM -----

Craig Ducey/ORSO/OR/BLM/DOI
09/20/2010 10:16 AM

To: Eric Greenquist/EUFO/OR/BLM/DOI@BLM
cc:
Subject: Fw: 3 quick issues

Craig Ducey
GIS/Remote Sensing Specialist
BLM Oregon State Office
503-808-6314

----- Forwarded by Craig Ducey/ORSO/OR/BLM/DOI on 09/20/2010 09:14 AM -----

Nathan Schumaker <[redacted]>
09/20/2010 09:11 AM

To: Brian Woodbridge <Brian_Woodbridge@fws.gov>, Jeffrey Dunk <Jeffrey.Dunk@humboldt.edu>, Brendan White <Brendan_White@fws.gov>, Dave LaPlante <dave@nrg-gis.com>, Craig Ducey <Craig_Ducey@or.blm.gov>
cc:

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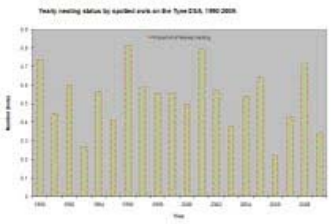
(541) 754-4658(See attached file: Baseline-2.xml)(See attached file: Nesting Rate.pdf)(See attached file: Dispersal Map.pdf)(See attached file:

Baseline-2.xml)(See attached file: Nesting Rate.pdf)(See attached file: Dispersal Map.pdf)

4 attachments



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Brendan_White@fws.gov <Brendan_White@fws.gov> **Mon, Sep 20, 2010 at 2:16 PM**
To: Nathan Schumaker <[redacted]>
Cc: Brian Woodbridge <Brian_Woodbridge@fws.gov>, Jeffrey Dunk <Jeffrey.Dunk@humboldt.edu>

Nathan -

Was that Ray Davis who gave you that dispersal map? Glasses, a little unshaven, nice guy, salt-n-pepa hair? He's on the MAG, so you would have seen him in Medford at that April [failed video] meeting we had.

Brendan White

U.S. Fish and Wildlife Service
Oregon State Office
(503)231-6179
Brendan_White@fws.gov

Nathan Schumaker <[redacted]> To Brian Woodbridge <Brian_Woodbridge@fws.gov>, Jeffrey Dunk <Jeffrey.Dunk@humboldt.edu>, Brendan White <Brendan_White@fws.gov>, Dave LaPlante <dave@nrg-gis.com>, Craig Ducey <Craig_Ducey@or.blm.gov>
09/20/2010 09:11 AM
cc
Subject
3 quick issues

[Quoted text hidden]

(541) 754-4658[attachment "Baseline-2.xml" deleted by Brendan White/OSO/R1/FWS/DOI] [attachment "Nesting Rate.pdf" deleted by Brendan White/OSO/R1/FWS/DOI] [attachment "Dispersal Map.pdf" deleted by Brendan White/OSO/R1/FWS/DOI]

Brian_Woodbridge@fws.gov <Brian_Woodbridge@fws.gov> **Mon, Sep 20, 2010 at 2:40 PM**

Cc: [redacted], Raymond J Davis <rjdavis@fs.fed.us>, Brendan_White@fws.gov, Jeffrey.Dunk@humboldt.edu

Hey all;
I'd l ke to loop these discussions past Bob Anthony....especially if we begin proposing changes.

bw

Brian Woodbridge
Northern Spotted Owl Recovery
Chair, Klamath Province Working Group
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Yreka Fish and Wildlife Office
vox: (530) 841-3101
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Janice Reid/RBFO/OR/BLM/DOI@BLM

Janice Reid/RBFO/OR/BLM/DOI@BLM
09/20/2010 01:24 PM

To Raymond J Davis <rjdavis@fs.fed.us>
cc [redacted], Brian Woodbridge/YFWO/R1/FWS/DOI@FWS
Subject Re: Fw: 3 quick issues

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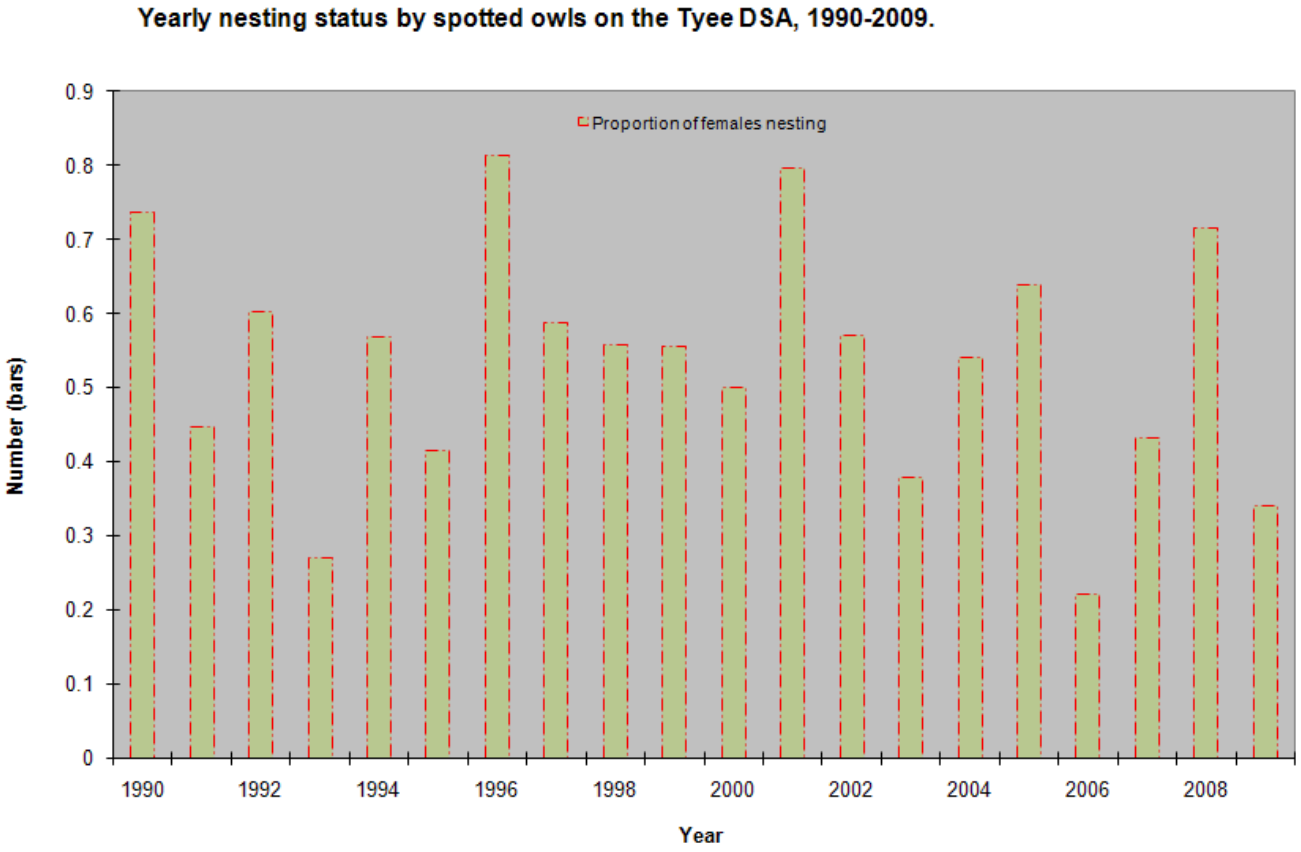

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"I love a dog. He does nothing for political reasons." ~Will Rogers

Raymond J Davis <rjdavis@fs.fed.us>

Raymond J Davis <rjdavis@fs.fed.us>

09/20/2010 12:07 PM

To Janice Reid <jareid@fs.fed.us>
cc
Subject Fw: 3 quick issues

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(541) 754-4658(See attached file: Baseline-2.xml)(See attached file: Nesting Rate.pdf)(See attached file: Dispersal Map.pdf)*(See attached file: Baseline-2.xml)(See attached file: Nesting Rate.pdf)(See attached file: Dispersal Map.pdf)*

5 attachments

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3K

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2K

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271K

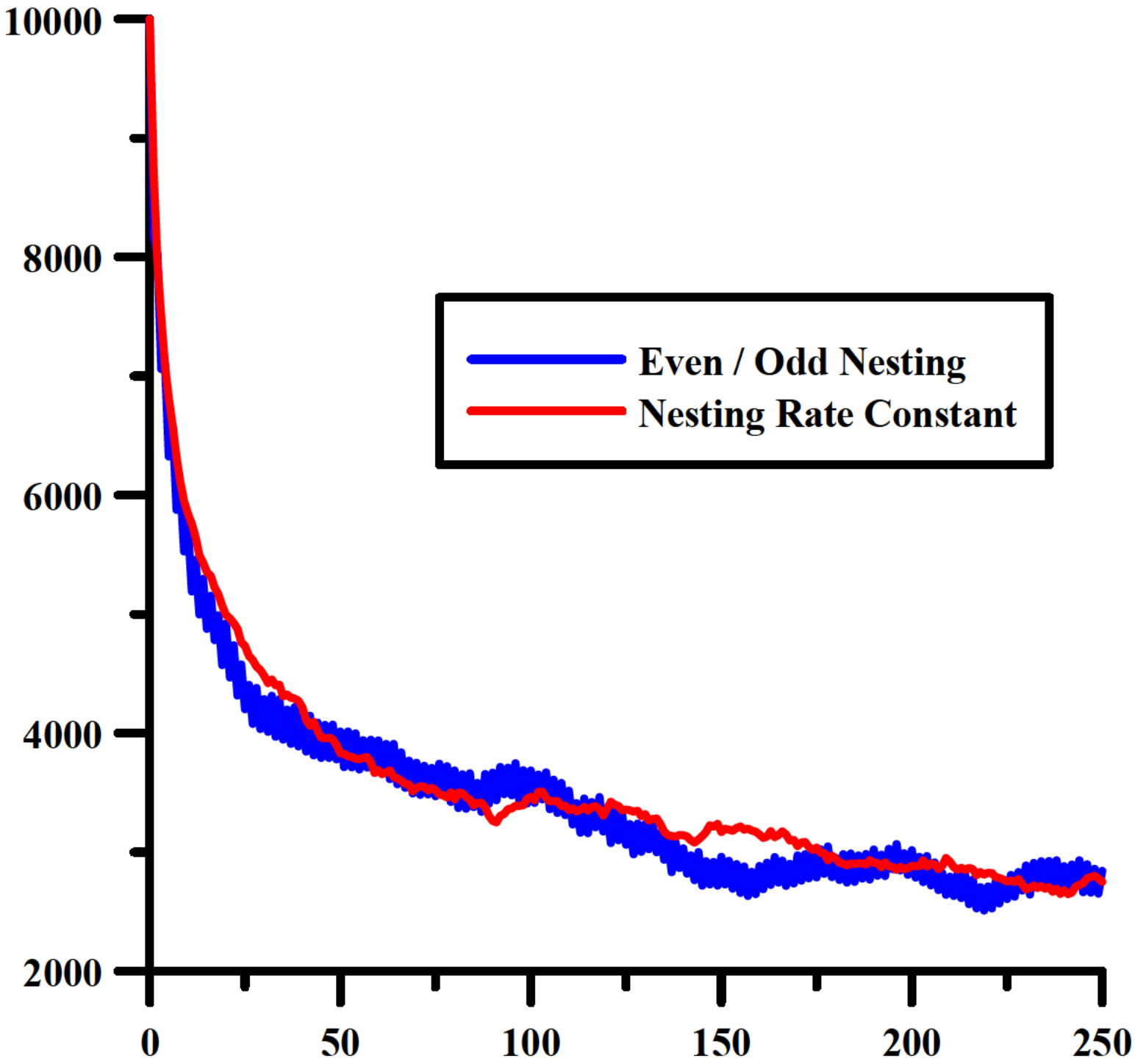
10000
8000
6000
4000
2000
0
50
100
150
200
250
Even / Odd Nesting
Nesting Rate Constant

Figure 3.17: Changes in dispersal capable landscapes.